

AMENDMENTS TO THE CLAIMS:

This listing of the claims will replace all prior versions, and listings, of the claims in this application.

Listing of Claims:

1. (Currently Amended) A method for receiving a signal, said method comprising the steps of:

receiving an RF signal, said RF signal comprising a plurality of information channel signals each comprising different code division multiple access data spread using a different spreading code, wherein each of said plurality of information channel signals are transmitted in one of a plurality of transmission bands, and each of said plurality of information channel signals is carried on one of a plurality of carrier frequencies;

down-converting said RF signal by a down-converter to form an intermediate signal, wherein said intermediate signal comprises down-converted versions formed by the down-converter of each of said plurality of information channel signals, and said down-converted versions of each of said plurality of information channel signals are generated from a plurality of frequencies, said down-converted versions of each of said plurality of information channel signals are within a common frequency spectrum; and

decoding said intermediate signal to extract data from said down-converted versions of each of said plurality of information channel signals.

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Original) The method of claim 1, wherein said step of down-converting comprises down-converting each one of said plurality of carrier frequencies by a plurality of oscillator frequencies.

6. (Original) The method of claim 5, wherein the frequency spacing between each adjacent pair of said plurality of carrier frequencies and between each adjacent pair of said oscillator frequencies is substantially the same.

7. (Original) The method of claim 1, wherein said common frequency spectrum comprises a

first common frequency spectrum, and the step of decoding said intermediate signal comprises the step of forming a baseband signal by down-converting said first common frequency spectrum to a second common frequency spectrum, said second common frequency spectrum lower in frequency than said first common frequency spectrum.

8. (Original) The method of claim 7, wherein the step of forming said baseband signal further comprises down-converting the intermediate signal using a first oscillator signal to form a first baseband component signal and a second oscillator signal to form a second baseband component signal, the first and second oscillator signals each at a same frequency and a different phase.

9. (Original) The method of claim 8, wherein said first baseband component comprises a first folded signal and said second baseband component comprises a second folded signal, each folded signal having a frequency spectrum narrower than said first common frequency spectrum.

10. (Original) The method of claim 9 further comprising the steps of:
sampling said first baseband component to form a first digital representation;
sampling said second baseband component to form a second digital representation; and
combining said first and said second digital representations to form an unfolded signal, said unfolded signal having a frequency spectrum greater than the spectrum of the first folded signal.

11. (Original) The method of claim 1, wherein the step of receiving an RF signal comprises receiving an RF signal from a cellular radio base station.

12. (Original) The method of claim 1, further comprising the step of filtering said intermediate signal to attenuate at least one signal outside the common frequency spectrum before performing said step of down-converting.

13. (Previously Presented) A mobile radio telephone unit comprising:
an antenna configured to receive an RF signal, said RF signal comprising a plurality of information channel signals, each comprising different code division multiple access data spread using a different spreading code, wherein each of said plurality of information channel signals is transmitted in one of a plurality of transmission bands, and each of said plurality of information channel signals is carried on one of a plurality of carrier frequencies;
a down-converter operatively coupled to the antenna and configured to down-convert said

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RF signal to form an intermediate signal, wherein said intermediate signal comprises down-converted versions of each of said plurality of information channel signals, and said down-converted versions of each of said plurality of information channel signals are generated from a plurality of frequencies, said down-converted versions of each of said plurality of information channel signals are within a common frequency spectrum;

a decoder operatively coupled to the down-converter and configured to decode said intermediate signal to extract data from said down-converted versions of each of said plurality of information channel signals.

14. (Cancelled)

15. (Previously Presented) The mobile radio telephone unit of claim 13, wherein said down-converter is configured to down-convert each of said plurality of carrier frequencies by a plurality of oscillator frequencies having a lower frequency.

16. (Previously Presented) The mobile radio telephone unit of claim 13, wherein said down-converter comprises an oscillator for generating an oscillator signal comprising a plurality of oscillator frequencies, the frequency spacing between each adjacent pair of said plurality of carrier frequencies and between each adjacent pair of said plurality of oscillator frequencies being substantially the same.

17. (Cancelled)

18. (Cancelled)

19. (Cancelled)

20. (Original) A CDMA receiver for operating in at least a first mode and a second mode, said CDMA receiver comprising:

an initial RF stage, said initial RF stage for outputting a received RF signal;

an oscillator, said oscillator for generating a plurality of oscillator signals, each at a different frequency, when the receiver operates in the first mode and generating a single oscillator signal when the receiver operates in the second mode;

a down-converter coupled to said initial RF stage and said oscillator, said down-converter for receiving said received RF signal and multiplying said RF signal by said plurality of oscillator signals when the receiver operates in the first mode, and multiplying said RF signal by said single oscillator signal when the receiver operates in the second mode, to generate an intermediate

signal; and

a baseband stage, coupled to said down-converter, said baseband stage for processing said intermediate signal.

21. (Previously Presented) A base station unit comprising:

a receiver to receive an RF signal, said RF signal comprising a plurality of information channel signals, each comprising different code division multiple access data spread using a different spreading code, wherein each of said plurality of information channel signals is transmitted in one of a plurality of transmission bands, and each of said plurality of information channel signals is carried on one of a plurality of carrier frequencies; and

a down-converter operatively coupled to said receiver and configured to down-convert said RF signal to form an intermediate signal, wherein said intermediate signal comprises down-converted versions of each of said plurality of information channel signals, and said down-converted versions of each of said plurality of information channel signals are generated from a plurality of frequencies, said down-converted versions of each of said plurality of information channel signals are within a common frequency spectrum.

22. (Previously Presented) The base station unit of claim 21, wherein said down-converter comprises an oscillator for generating an oscillator signal comprising a plurality of oscillator frequencies, the frequency spacing between each adjacent pair of said plurality of carrier frequencies and between each adjacent pair of said plurality of oscillator frequencies being substantially the same.

23. (Previously Presented) A chip apparatus comprising:

a receiver to receive an RF signal, said RF signal comprising a plurality of information channel signals, each comprising different code division multiple access data spread using a different spreading code, wherein each of said plurality of information channel signals is transmitted in one of a plurality of transmission bands, and each of said plurality of information channel signals is carried on one of a plurality of carrier frequencies; and

a down-converter operatively coupled to said receiver and configured to down-convert said RF signal to form an intermediate signal, wherein said intermediate signal comprises down-converted versions of each of said plurality of information channel signals, and said down-converted versions of each of said plurality of information channel signals are generated from a

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plurality of frequencies, said down-converted versions of each of said plurality of information channel signals are within a common frequency spectrum.

24. (Previously Presented) The chip apparatus of claim 23, wherein said down-converter comprises an oscillator for generating an oscillator signal comprising a plurality of oscillator frequencies, the frequency spacing between each adjacent pair of said plurality of carrier frequencies and between each adjacent pair of said plurality of oscillator frequencies being substantially the same.

25. (Previously Presented) An apparatus comprising:

a means for receiving an RF signal, said RF signal comprising a plurality of information channel signals each comprising different code division multiple access data spread using a different spreading code, wherein each of said plurality of information channel signals are transmitted in one of a plurality of transmission bands, and each of said plurality of information channel signals is carried on one of a plurality of carrier frequencies; and

means for down-converting said RF signal to form an intermediate signal, wherein said intermediate signal comprises down-converted versions of each of said plurality of information channel signals, and said down-converted versions of each of said plurality of information channel signals are generated from a plurality of frequencies, said down-converted versions of each of said plurality of information channel signals are within a common frequency spectrum.

26. (Previously Presented) The apparatus of claim 25, wherein said down-converter comprises an oscillator for generating an oscillator signal comprising a plurality of oscillator frequencies, the frequency spacing between each adjacent pair of said plurality of carrier frequencies and between each adjacent pair of said plurality of oscillator frequencies being substantially the same.

27. (New) The mobile radio telephone unit of claim 13, wherein each down-converted version is processed by circuitry that processes all other down-converted versions from the down-converter to the decoder.